

In The
United States Court of Appeals
For The Federal Circuit

ICON HEALTH & FITNESS, INC., a Delaware corporation,

Plaintiff – Appellant,

v.

**POLAR ELECTRO OY, a Finnish company,
POLAR ELECTRO INC., a Delaware corporation,**

Defendants – Appellees.

**APPEAL FROM THE UNITED STATES DISTRICT COURT FOR
THE DISTRICT OF UTAH IN CASE NO. 1:11-CV-00167-BSJ,
JUDGE BRUCE S. JENKINS.**

BRIEF OF APPELLEES

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CERTIFICATE OF INTEREST

Counsel for defendant-appellees, Polar Electro Oy and Polar Electro, Inc. (collectively “Polar”) certify the following:

1. The full name of every party represented by counsel is:

Polar Electro Oy and Polar Electro, Inc.

2. The name(s) of the real party(ies) in interest represented by counsel are:

Not Applicable.

3. Any parent corporations and any publicly-held companies that own 10% or more of the stock of the parties represented by counsel are:

None.

4. The names of all law firms and the partners or associates that appeared for the parties now represented by counsel in the trial court or are expected to appear in this case are:

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JURISDICTIONAL STATEMENT

Polar agrees that this Court has jurisdiction over this appeal. As the Statement of the Case below outlines, however, there was no judgment of noninfringement. The issue of noninfringement is therefore not before this Court.

STATEMENT OF THE ISSUES

A. Whether the district court properly looked to evidence of how those of ordinary skill in the art would understand the technology of the patent in determining that the claims are invalid as indefinite.

B. Whether the district court properly looked to evidence of how those skilled in the art would understand the specification and prosecution history of the patent, in determining that the claims are invalid as indefinite.

C. Whether the district court properly found that, in view of the intrinsic and extrinsic evidence, U.S. Patent No. 6,921,351 (“351 patent”) does not inform those skilled in the art about the scope of the invention with reasonable certainty, and therefore does not satisfy 35 U.S.C. § 112 (paragraph 2).

STATEMENT OF THE CASE

Polar objects to Icon’s Statement of the Case because it inappropriatelymingles argument, opinion, and facts. Polar respectfully submits this Statement of the Case, which more accurately represents the procedural history of the case relevant to the indefiniteness issue before the Court. In short, there were three

rounds of briefing and four hearings, including an evidentiary hearing, during which the district court heard testimony from the parties' respective experts directed to the issue of indefiniteness.

The first hearing, on January 10, 2014, addressed the issue of indefiniteness, and construction of terms that are not before this Court. Following the Supreme Court's opinion in *Nautilus, Inc. v. Biosig Instruments, Inc.*, -- U.S. --, 134 S. Ct. 2120 (2014), the district court set the issue of indefiniteness for re-argument.¹ The second hearing, re-argument of the indefiniteness issue, occurred on August 21, 2014. (A507).²

After considering the intrinsic evidence at two hearings and in the accompanying briefing, the district court was unable to resolve the indefiniteness issue, and needed technical background information. The district court sought the assistance of persons of ordinary skill in the art, stating:

Having considered the parties' briefs and the arguments of counsel, the court finds it is unable to construe the purported claims without the assistance of those skilled in the art. As such, it is desirable for each party to designate their "expert" skilled in the art and to provide opportunities for deposition. Parties should designate any such expert

¹ Dkt. No. 74, 07/18/2014 Notice of Hearing. This notice is not a standalone document. It is an ECF entry on the case docket report, and is therefore not included in the appendix.

² Icon notes Polar's early efforts with Icon to define the terms at issue. (Brief, 14-15, 29-30). Subsequent investigation into bases for the proposals proved the proposals to be incorrect and factually unsupported. Thus, Polar could not continue to advance the early proposals. (A289).

within (2) days, and parties should complete discovery by December 31, 2014.

(A750).

Following the close of expert discovery, the parties filed their respective supplemental briefing incorporating the testimony of their respective experts. (Icon: A926-1107; Polar: A805-925). Polar also filed a motion for summary judgment of invalidity limited to the indefiniteness of the claimed “relationship.”³ (A759-925; A2024-2044). Icon opposed the motion. (A1467-2023).

The district court conducted the third hearing on February 27, 2015, which was an evidentiary hearing, to hear testimony from those skilled in the art that the district court requested. The district court heard final argument on March 30, 2015, and summarized its determination bases:

The Court, finding that particular adventure [construing relationships in an effort to construe claims] somewhat daunting, requiring help, as a matter of process, we had you bring in your contending experts to provide a substantive footing to assist the Court in trying to adequately construe the claims.

I found the testimony by the experts quite helpful. Each purported to proffer the same testimony that he would offer at trial.

³ Claim 1 recites: “said out-of-band communication has a relationship to said in-band communication.” (A75 col. 30:45-47). Claim 5 recites similar language: “an out-of-band communication device capable of a communication with a user of said at least one exercise apparatus that has a relationship to said in-band communication.” (A76 col. 31:7-10). Polar refers to these limitations as the claimed “relationship.”

And the question really became, well, somewhat broader than the rather limited motion for summary judgment. And it had to do with the broader subject of whether the claims as filed were genuinely capable of construction with all due deference to Icon and with due deference to the patent office and the presumption of validity.

The argument today is broader than the limited argument for summary judgment. At least it has been so construed by the Court: Is the claim capable of construction, and if so, how do we construe it.

In light of the evidentiary footing that we have and in light of the broadened discussion that we've engaged in today, I think that, in light of the whole record and the whole claim, that the claim is incapable of a rational construction. It's plagued with the impermissible vagueness because of, among other things, the absence of a defined "band" in quotation marks or a defined referent as to whom messages are to be received or messages communicated from.

It lacks the clarity, in my opinion, and the specificity that would justify the issuance of a patent being incapable of rational construction. It seems to me that inherent in that is the question of validity. If you can't construe it, it can't be valid.

(A2048-49).

Polar submitted a Proposed Memorandum Opinion & Order Regarding Claim Construction as directed by the district court. (A2052-2076). Icon filed objections to the Proposed Memorandum Opinion & Order Regarding Claim Construction. (A2186-90). The district court issued its Memorandum Opinion & Order Regarding Claim Construction on May 18, 2015 ("Order"). (A2-24).

The district court made several fundamental factual findings concerning the background technology: (1) the terms "in-band" and "out-of-band" have a general meaning to those skilled in the art (A20); (2) they are relative terms (A19, A20);

(3) they are treated as separate and distinct terms (A20); and (4) they only have meaning in a given context with a defined reference (A21).

The district court reviewed the ten extrinsic references cited by both experts and Dr. Heppe's tutorial on background technology (discussed below in the Statement of Facts) and found:

Each of the ten extrinsic prior art patents and text books cited by the experts defines a reference that allows the reader to differentiate in-band from out-of-band in relation to that reference (February 27, 2015 Hearing Transcript, p. 82:8-15 [A2159]). That testimony together with the extrinsic patents and textbooks, shows that those skilled in the art understand that the terms "in-band" and "out-of-band" are relative terms, and only have meaning in a given context with a defined reference, such as a frequency, a channel, a protocol, time slots, and data streams. (*See, e.g., id.*, pp. 82:8-83:2 [A2159-60]).

(A21).

There is no guidance of what comprises the "out-of-band communication" having a relationship to the "in-band communication."

(A22).

The district court applied these findings to its analysis of the '351 patent and the prosecution history to determine whether the required reference was disclosed. (A20-21). After finding that the required reference was not disclosed, the district court arrived at the legal conclusion that the '351 patent failed to inform those skilled in the art about the scope of relative terms "in-band communication" and "out-of-band communication," and about the scope of the claimed "relationship"

with reasonable certainty, and consequently determined that the claims did not satisfy 35 U.S.C. § 112 (paragraph 2). (A21-22).⁴

Judgment in favor of Polar and dismissing Icon's claim of infringement of the '351 patent was entered on June 5, 2015. (A2191). Icon moved to make the court's June 5, 2015 judgment final, pursuant to Fed. R. Civ. P. 54(b). (A2193-2200). The district court granted Icon's motion on July 9, 2015.⁵ Icon filed its Notice of Appeal on July 28, 2015.

STATEMENT OF FACTS

To the extent that Icon's Statement of the Case also constitutes a Statement of Facts, Polar objects to the purported facts as incomplete, argumentative, and contrary to the record.

I. Claim Terms At Issue

The claim terms at issue are: (a) "in-band communication," (b) "out-of-band communication," (c) "out-of-band communication device,"⁶ (d) "said out-of-band

⁴ The district court did not address a separate ground for invalidity of claim 1 resulting from its recitation of a method step in an apparatus claim; this issue is not before this Court. *IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377, 1384 (Fed. Cir. 2005). Polar reserves this and all other grounds for invalidity of the '351 patent claims.

⁵ Dkt. No. 117.

⁶ Icon's opening brief notes the typographical omission of "communication" from the district court's opinion. (Brief, 18-19). Icon failed to mention this typographical omission in its five pages of objections to the proposed order. (A2186-2190).

communication has a relationship to said in-band communication” and the corresponding language in claim 5. (A2).

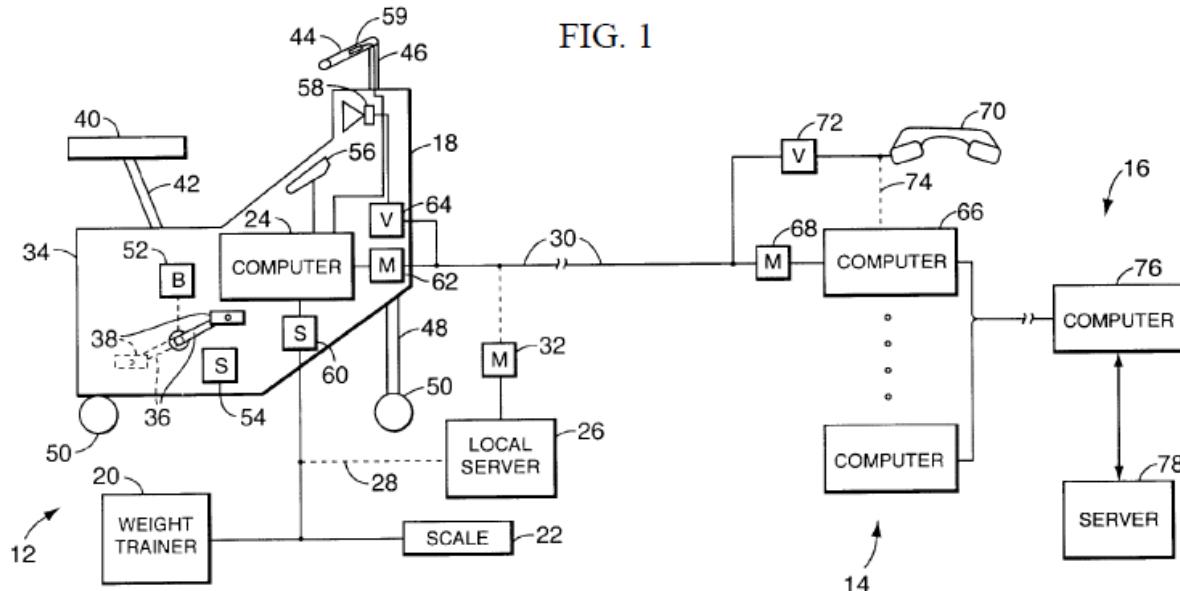
II. The Specification

Polar disagrees with Icon’s attorney argument paraphrasing the ’351 patent specification and its prosecution history. (Brief, 6-14). For example, Icon argues the patent distinguishes between “in-band communication” and “out-of-band communication” on the basis of simplicity of communications. (Brief, 10). Specifically, Icon argues “in-band communications” are “handled” by an inexpensive controller and “out-of-band communications” are complex communications “handled by expensive,” “add-on hardware.” (Brief, 10). However, Icon ignores the district court’s factual findings on the ’351 patent based on expert testimony on background technology.⁷ Polar therefore provides the following relevant district court findings, ’351 patent sections, and undisputed testimony.

The ’351 patent discloses an exercise and health system that includes computerized exercise and/or health equipment. Figure 1 of the ’351 patent shown below is an example of the patent’s computer network exercise system. In Figure

⁷ Icon points to nothing in the ’351 patent on how to determine what constitutes simple or inexpensive hardware. Importantly, claim 1 recites that the exercise apparatus and local server are “having an in-band communication using a bi[]-directional wireless protocol.” and “an out-of-band communication with a user.” The issue below was, and that is now being reviewed by this Court is, how to distinguish between these two kinds of communications.

1, a computer 24 in bicycle 18 is connected by a line 30 (which can be the Internet) to a remote computer 66, which is connected to server station 16. The '351 patent divides its system into two parts: a local system 12 on the left hand side of line 30, and a remote system on the right hand side of line 30. The local system 12 "can provide feedback and encouragement to the user, i.e. can serve as a 'virtual personal trainer.'" (A4).



(A4).

The local system 12 also includes two subparts: an exercise device such as a stationary bicycle 18 with a computer 24; and a local server, such as 26 shown above in Figure 1. The '351 patent discloses that the local server 26 need not be a separate computer. For example, in the preferred embodiment, the computer 24 plays a dual role: the computer for bicycle 18, and "a 'local server' for other health

and fitness devices at local system 12, such as the weight trainer 20 and the scale 22. (A4-5) (emphasis added).

Figure 13 shows another embodiment of the computer network exercise system. The '351 patent describes it as "a remote interactive exercise and health system in accordance with the present invention." (A5).

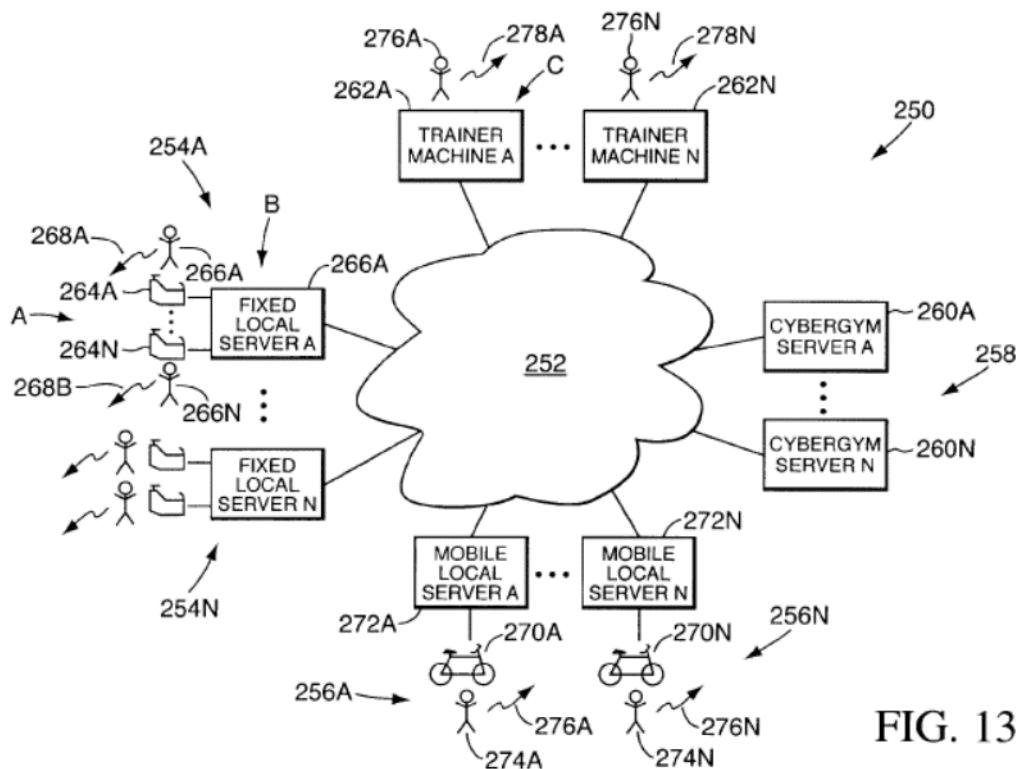
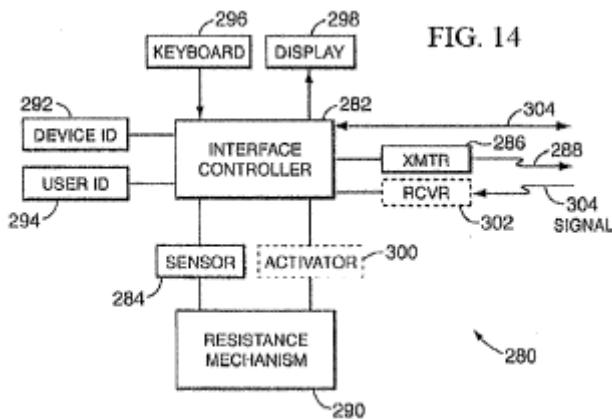


FIG. 13

While the Figure 13 embodiment has additional features, it also has the basic two parts of the Figure 1 network: local systems and remote servers. The local servers are connected through the Internet (252) to remote servers (260A - 260N). Two additional features of this embodiment compared to Figure 1 are mobile

exercise devices, like bicycle 270A, and trainer machines (262A - 262N) staffed by trainers (276A - 276N). (A5-6).

Figure 14 is a block diagram of an exercise device circuit that can be associated with, for example, an exercise device 264A-264N or 270A-270N. An exercise device controller 280 includes an interface controller 282. (A6).



(A6).

A version of Figure 14 with annotations is useful in understanding content of the figure and description in the specification. Icon's Supplemental Reply To Polar's Opening Claim Construction Brief copied the following annotated version of Figure 14 from an earlier Polar brief. (A318).

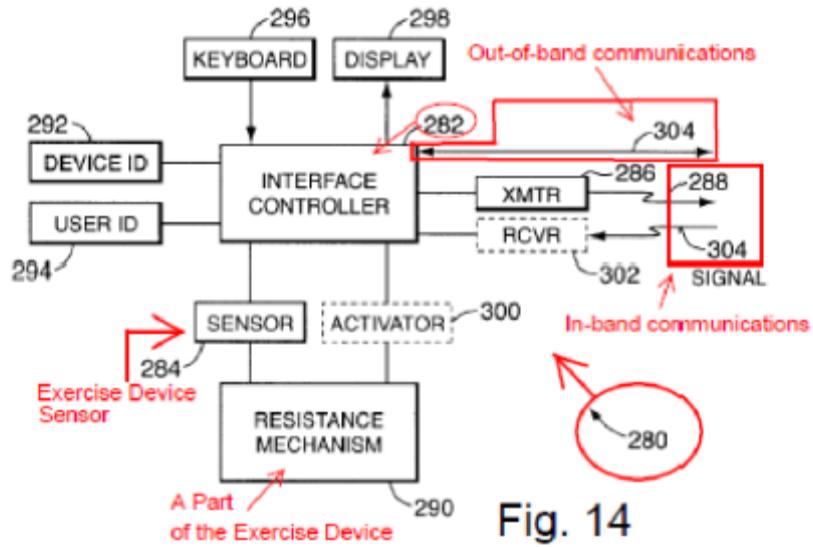


Fig. 14

The '351 patent describes Figure 14, as depicting the control circuitry within exercise devices of Figure 13, which is reproduced above. (A62 at 4:24-25). More specifically, the '351 patent describes Figure 14, with reference to Figure 13, as “a block diagram of an exercise device circuit which can be associated with, for example, an exercise device 264A-264N or 270A-270N.” (A69 at 81:28-30).

It is undisputed that the top double headed arrow line (304) is “out-of-band communication.” (Icon A2103 at 7-11, 24-25; Polar A2164 at 5-10). The '351 patent teaches that the in-band receiver 302 shown in Figure 14 is optional, stating “[c]ommunications between the interface controller and the rest of the system 250 through the transmitter 286 and *the optional receiver 302* comprise “in-band” communication. (A70 at 19:22-24) (emphasis added) (See also Icon’s expert testimony, A2102 at 11-24). The '351 patent states that the “out-of-band

communications” [top double headed arrow line 304] can be between the exercise device and a local server. (A70 at 25-27).

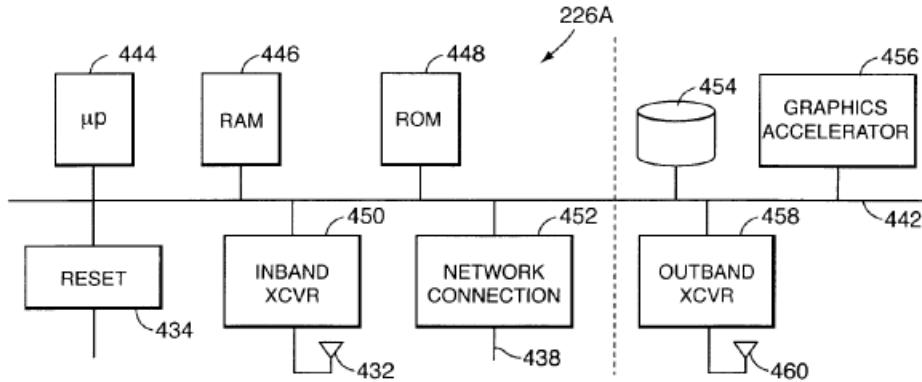
The above quotes from the '351 patent explain communications between the interface controller inside an exercise device and the rest of the system. The passage as a whole reads:

[c]ommunications between the interface controller and the rest of the system 250 through the transmitter 286 and the optional receiver 302 comprise “*in-band*” communication. However, there can also be *out-of-band* communication signals 304 between the controller 280 and, for example, a local server 266A. These “*out-of-band*” signals can include, for example, high speed data communication to provide real time video (e.g. streaming video over the Internet) on the display 298.

(A70 at 19:22-30) (emphasis added). The district court found that, “[b]y this passage, the '351 patent teaches that there can be out-of-band communication signals between exercise device controller 280 and the local server 266A.” (A7).

The district court also found that the '351 patent teaches that out-of-band communications can be wireless. (A7). Figure 21 “shows a typical computer architecture for a server 226A,” and “[t]he out-of-band transceiver 458 is shown as a wireless transceiver.” (A7) (citing A72 at 23:14-15, 24:7-8).

FIG. 21



(A7).

In construing the claims, the district court found “[t]he ’351 patent uses the terms ‘communication,’ ‘experience,’ and ‘interaction’ in an apparently interchangeable manner.” (A12). The district court stated that, “in view of the [contradicting] testimony and the intrinsic record, the language of the claims is not helpful in understanding and distinguishing “in-band communication” and “out-of-band communication.” (A17-18).

III. The Prosecution History

Polar disagrees with Icon’s argumentative discussion of the prosecution history.

The original text of claim 1 was amended as follows:

1. (currently amended) An exercise system comprising:
a local system including at least one exercise apparatus and at least one associated local server, said at least one local server monitoring the operation of said at least one exercise apparatus, said exercise apparatus and said local server having an in-band communication using communicating with a bi-directional wireless protocol;

an out-of-band communication with a user of said at least one exercise apparatus, wherein said out-of-band communication has a relationship to said in-band communication;

(A8).

Based on these amendments and the presumption of administrative correctness, Icon argues what it believes the Examiner may have had in his mind. (Brief, 14). However, what the examiner thought, or did not think, is unknown. What is clear is that the changes narrowed the claim. Before the amendment (i.e., including the above stricken text and without the underlined text), the claim defined the exercise device and local server as communicating: “said exercise apparatus and said local server communicating.” (A8). The amendment narrowed the claim, from broadly “communicating” to the exercise apparatus and local server, to having a particular kinds of “communication” and “out-of-band communication.”

This amended language does not require that the exercise device and local server have only “in-band communication.” They could be having other communications, but for the purposes of this claim, they must also have at least “in-band communication.” In fact, as discussed more fully below, both claim 1 and claim 5 recite a third type of communication. Claim 1 recites this third kind of communication as: “data communication between said local server and said remote server.” (A75, col. 30:53-54). Claim 5 recites this third kind of communication as:

“at least one remote server in communication with said local server.” (A76, col. 31:15-16).

IV. Expert Testimony

Polar objects to Icon’s argumentative use of incomplete snippets of expert testimony, and therefore provides this more complete summary of the relevant expert testimony.

Icon’s expert, Dr. Islam, asserts that “‘in-band’ refers to one pathway, and ‘out-of-band’ refers to a different pathway.” (Brief, 19). According to Dr. Islam, the claim terms “in-band” and “out-of-band” are indices that can be replaced with “1 or 2 or A or B,” (A2126:4-14), or even the name “George,” (A2127:19-A2128:8). Both Icon’s and Dr. Islam’s re-styling the claim, in effect, relegates the modifiers “in-band” and “out-of-band” to indices. Because it effectively eliminates technical meaning from these claim terms, it contradicts Icon’s new contention that the terms are distinguishable based on characteristics of hardware that processes the “in-band communication” and “out-of-band communication.” Neither Icon nor its expert defines the new term, “pathway”; it is not used in the claims, the patent or the prosecution history. (A2129:16-21). In fact, Dr. Islam testified that he hadn’t “given it [the meaning] much thought.” (A2128:9-5). It could be a way to communicate from point A to B. (A2129:1-15). In short, as Polar’s expert, Dr. Heppe, explained, the undefined term “pathway” raises another

level of ambiguity in the attempt to understand “in-band communication” and “out-of-band communication.” (A2177:15-A2179:10).

Icon derides Dr. Heppe’s tutorial on the general background technology, arguing it “is without regard to the patent at issue in this case or other intrinsic evidence.” (Brief, 21). Background technology, by definition, is background of the state of the art at the time of the patent. *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015) (“*Teva II*”) (district court’s findings on background science or the meaning of a term in the relevant art during the relevant time period are subject to clear error review).

As an electrical engineer with about 35 years of experience focusing mostly on communications (A2147:14-16), Dr. Heppe testified in his tutorial on background technology that common AM and FM radios illustrate that “in-band” and “out-of-band” have a understood meaning. (A2152:1-14). Dr. Heppe stated that people treat “in-band” and “out-of-band” as distinct and separate. (A2152:14-16).

The terms “in-band” and “out-of-band” are relative terms. (A2152:16-A2153:1). The terms “in-band” and “out-of-band” can relate to frequencies (A215:2-7). Using well-known GSM cell phone technology as an example, Dr. Heppe testified that “in-band” and “out-of-band” can refer to different packets in a message (A2153:6-A2154:2), or different types of packets, such as control packets

could be considered “in-band” and user traffic packets could be considered “out-of-band.” (A2154:6-15). Dr. Heppe used this technology to show that depending upon the reference choice, different things can be considered “in-band” and “out-of-band.” (A2154:13-15).

Dr. Heppe also illustrated the use of a reference in computer communications, where with prior agreement, packets from computer A could be considered “in-band” and packets from computer B would be “out-of-band.” (A2154:16-A2155:5). Dr. Heppe supported his testimony by illustrating that ten references, patents and textbooks, cited by Icon’s expert to show “in-band” and “out-of-band” were understood by those skilled in the art, demonstrate that the terms are relative, and are used in a given context with an agreed reference. (A2155:10-24). Icon did not challenge this testimony.

- U.S. Patent No. 6,473,795 (A964-65) – Dr. Heppe testified that this patent defines a reference as the type of communications channel. (A2156:15-A2157:4, A2159:2-3).
- U.S. Patent No. 6,510,481 (A965-66) – Dr. Heppe testified that this patent defines a reference as periods of time and different protocols. (A2157:5-18, A2159:2-3).
- U.S. Patent No. 5,257,396 (A966-67) – Dr. Heppe testified that this patent defines a reference as frequency. (A2157:19-23, A2159:2-3)

- U.S. Patent No. 5,497,187 (A967) – Dr. Heppe testified that this patent defines a reference as a frequency. (A2157:24-A2158:1, A2159:2-3).
- U.S. Patent No. 6,721,547 (A968) – Dr. Heppe testified that this patent defines a reference as frequency. (A2158:1-3, A2159:2-3).
- The textbook, William Stallings, *Data & Computer Communications* (Prentice Hall 2000), ISBN 0-13-084370-9 (A97071) – Dr. Heppe testified that this textbook uses a frequency as a reference, which is very common and well understood. (A2158:8-14, A2159:2-3).
- The textbook, Larry L. Peterson & Bruce S. Davie, *Computer Networks: A Systems Approach* (Morgan Kaufmann Publishers 1996), ISBN 1-55860-368-9 (A971) – Dr. Heppe testified that this textbook uses separate data flows as a reference. (A2158:15-22, A2159:2-3).
- The textbook, S. Keshav, *An Engineering Approach to Computer Networking* (Addison-Wesley, Reading, Massachusetts 1997), ISBN 0-201-63442-2 (A971-72) – Dr. Heppe testified that this textbook uses different channels as a reference. (A2158:23-24, A2159:2-3).
- The handbook, *CRC Handbook of Modern Telecommunications* (Patricia Morreale and Kornel Terplan eds., CRC Press 2001), ISBN (A972) – Dr. Heppe testified that this handbook uses different channels as a reference. (A2158:24, A2159:2-3).

- The textbook, Paul L. Green, *Fiber Optic Networks* (Prentice Hall 1993), ISBN 0-13-319492-2 (A972-73) – Dr. Heppe testified that this textbook uses wavelength, time slots or CDMA codes as references. (A2158:24-A2159:3, A2159:2-3).

Based on his examples of FM radio, GSM cell phone technology, computer communications, and the ten references noted above, Dr. Heppe testified that:

- (1) “in-band” and “out of-band” should be distinct (A2159:3-7);
- (2) “in-band” and “out-of-band” are relative terms (A2159:8-9);
- (3) “in-band” and “out-of-band” only have a particular meaning when the reference band or the equivalent of a reference band is known (A2159:9-15);
- (4) a reference can be defined by frequency, channels, protocols, time slots, data streams (A2159:18-22); and
- (5) “People understand the general concept of in-band and out-of-band but to have a particular discussion and understand what might be considered in-band in the context of a particular discussion, you need to have the reference band defined.” (A2159:22-A2160:1).

Icon suggests that by the district court’s comment, “I would be interested in his opinion as to the construction of Claim 1 and Claim 5,” (A2160), the district court sought legal opinions from Dr. Heppe. (Brief, 21). However, as outlined in the Statement of the Case above, the district court instead sought expert testimony

“to provide a substantive footing to assist the Court in trying to adequately construe the claims” and to provide the “evidentiary footing that we have and in light of the broadened discussion that we’ve engaged in today, I think that, in light of the whole record and the whole claim.” (A2048-49). The district court properly sought assistance in its effort to resolve the indefiniteness issue. *Teva II*, 135 S. Ct. at 841 Dr. Heppe’s testimony, as one skilled in the art, does not convert his understandings of the ’351 patent as one skilled in the art, to legal conclusions, even if such understandings are dispositive. *Teva II*, 135 S. Ct. 831, 841-42 (“Simply because a factual finding may be nearly dispositive does not render the subsidiary question a legal one.”).

Based on the background technology that Dr. Heppe provided and its independent assessment of the terms at the hearings,⁸ the district court assessed the subsidiary issue of whether claim 1 provided the required reference. It could not find one. (A2163:2-5). Based on the background technology that Dr. Heppe provided, the district court assessed the subsidiary issue of whether the ’351 patent provided the required reference based on the connectivity (endpoints of the communication) (A2163:19-2165:19), wavelength or frequency (A2165:20-25),

⁸ The district court extensively questioned the parties in an effort to understand the terms. *See e.g.*, A425:19-20; A426:1-430; A439:23-A449:19; A459:18-A461:25; and A492:17-A494:4. The transcript of the March 30, 2015 hearing is not yet part of the joint appendix. Polar cannot provide citations to the extensive questioning concerning the terms that the district court posed at that hearing.

bandwidth of data rate (2166:2-9), information content (2166:10-20, and could not find one. (A2166:21-25).

Based on the background technology that Dr. Heppe provided, the district court also assessed the subsidiary issue of whether the '351 patent prosecution history provided the required reference and could not find one. (A2167:1-21). Dr. Heppe testified as to the ambiguities raised by Icon's use of "pathway" to describe "in-band communication" and "out-of-band communication," using Icon's analogy of comparing a "pathway" to a road. (A2177:15-2179:1). The district court attempted to understand Icon's analogy and the meaning of "pathway" and concluded "we come to the fundamental issue which is that all of these things [Icon's road analogy] require a reference. Without a reference you cannot tell what is in or what is out." (A2178:22-A2179:10).

V. Icon's Asserted Undisputed Facts Are Erroneous

Icon styles the expert testimony as if the "experts differ only on the factual question of whether a person of ordinary skill in the art would need to be *provided* with a specific 'in-band' starting point (as distinguished from *selecting* one in order to understand what is 'out-of-band.''" (Brief, 23-24). What Icon means by this alleged "only" difference is unclear. For example, what Icon means by "a specific 'in-band' starting point" is unknown. Neither expert testified about such a "starting point." Thus, Polar must guess at what Icon means.

The alleged “only” difference of being “*provided*” the unknown “starting point” and “*selecting one*” is not reflected in the expert testimony. Icon’s expert, Dr. Islam, largely ignored Dr. Heppe’s analysis of the background technology, the ’351 patent, its prosecution history and the claims. At the evidentiary hearing, Icon chose not to have Dr. Islam rebut Dr. Heppe’s testimony, including Dr. Heppe’s testimony that:

- (1) “in-band” and “out of-band” should be distinct (A2159:3-7);
- (2) “in-band” and “out-of-band” are relative terms (A2159:8-9);
- (3) “in-band” and “out-of-band” only have a particular meaning when the reference band or the equivalent of a reference band is known (A2159:9-15);
- (4) a reference can be defined by frequency, channels, protocols, time slots, data streams (A2159:18-22); and
- (5) “People understand the general concept of in-band and out-of-band but to have a particular discussion and understand what might be considered in-band in the context of a particular discussion, you need to have the reference band defined.” (A2159:22-A2160:1).

In short, as outlined above, Dr. Heppe’s testimony on the background technology is clear and succinct. The district court’s factual findings based on that testimony are subject to clear error review. *Teva II*, 135 S. Ct. at 841 (factual findings based on background technology and the meaning of terms in the relevant art “must be reviewed for clear error on appeal.”)

SUMMARY OF ARGUMENT

The claims at issue are invalid because the '351 patent uses the terms "in-band" and "out-of-band" in overlapping and inconsistent ways that do not inform those skilled in the art about the scope of the invention with reasonable certainty, and provide no boundaries for the claimed "relationship."

The district court made clear factual findings grounded in background technology and supported by the record because the intrinsic evidence did not resolve the indefiniteness issue. There is no merit to Icon's request for *de novo* review of the indefiniteness findings. First, Icon is flatly wrong in arguing that the intrinsic evidence is clear. Second, Icon is wrong in arguing that the district court's reliance on Polar's expert, as one of ordinary skill in the art, was legal analysis. Nor is there any merit to the new contention for definiteness that Icon raises for the first time before this Court, having failed to do so below, that:

(1) "in-band" is definite because those skilled in the art would recognize it refers to separate and relatively inexpensive, non-complex and standard-issue hardware, (Brief, 31-44), and (2) "out-of-band" is definite because those skilled in the art recognize it refers to non-standard-issue, more expensive hardware, which is an optional enhancement. Icon's new contention does not solve any ambiguity, and only add further ambiguity as to what constitutes "inexpensive," "standard-issue," "separate," or "complex." Icon's new contention fails to explain where the '351

patent teaches one of ordinary skill in the art to make these judgments. Icon's new contention also ignores that "out-of-band communication" in claim 1 requires no hardware, whether it be non-standard-issue, expensive, complex, or separate. Icon does not explain how such hardware limitations can be read into this non-hardware claim limitation.

Icon's remaining bases for definiteness epitomize indefiniteness. In Icon's view, one reading the claim (presumably on an accused system) need only *select* what it considers be "in-band communication," and other communications are thus "out-of-band communication." But, this selection argument provides no guidance for making the selection, and does not help provide reasonably clear claim boundaries. It is no different than if Icon owned a baseball stadium and defined a fair, in-bounds ball as a ball travelling between home plate and the stands flying a curved path, and defined a foul, out-of-bounds ball, and any ball other than an in-bounds ball. This is obviously an unworkable scenario because there is no agreed reference – no boundary, foul line. Simply *selecting* an in-bounds ball underscores the arbitrary nature of *selecting*. Selecting an in-bounds ball is subject to the whims of the selector. There is no reference to guide the *selection*, and no limit to who selects. There can be multiple selectors; the patent owner will make one *selection*, and others will make their *selections*. The '351 patent, on its face, and as the district court correctly found, provides no reference, and thus does not inform

those skilled in the art about the scope of the invention with reasonable certainty. (A20-21). In short, Icon’s suggestion that simply *selecting* a communication, amounts to nothing more than “I know it when I see it.”

Nor is there validity to Icon’s assertion that “in-band communication” and “out-of-band communication” are distinct because they occur over different “pathways.” Assuming that such a distinction can be made, it does not define either “in-band communication” or “out-of-band communication.” Importantly, the term at the core of Icon’s contention – “pathway” – is not in the claims, the patent or its prosecution history. (See e.g., A2129:16-24). And further, the meaning of “pathway” is unknown. Even the source of this terminology, Icon’s expert, had not “given it [the meaning] much thought.” (A2128:9-5). In short, the alleged “pathway” distinction is merely an iteration of Icon’s “I know it when I see it” basis for definiteness.

The other pivotal shortcoming of Icon’s arguments is the bedrock fact that the ’351 patent provides no boundaries for the claimed “relationship” between “in-band” and “out-of-band” communications. Icon’s appellate brief offers no guidance on how to determine the boundaries of the claimed “relationship,” other than offering a new construction not presented to the district court. But, as the district court correctly found, the patent does not offer guidance on the boundaries of the claimed “relationship.” Accordingly, the claimed “relationship’s”

boundaries are arbitrary and not defined with reasonable certainty, under either a clear error or *de novo* standard of review.

ARGUMENT

I. The Clear Factual Findings Establish That the '351 Patent Does Not Inform Those Skilled in The Art About The Scope Of “In-Band Communication” and “Out-of-Band Communication” With Reasonable Certainty

A. There is no merit to Icon’s argument for *de novo*

1. The claim language does not provide meaning for “in-band communication” and “out-of-band communication” with reasonable certainty

Icon contends that the claim language alone shows that “in-band” is something separate and distinct from “out-of-band,” especially since they have to have a relationship. (Brief, 29). Merely being different does not define the two kinds of communications: “in-band communication” and “out-of-band communication.” Icon’s appellate brief does not assert otherwise. Thus, the claim language does not provide meaning for “in-band communication” and “out-of-band communication,” let alone with reasonable certainty. Icon’s argument for *de novo* review of the district court’s findings based on the claim language itself, lacks merit.

2. The '351 specification does not provide meaning for “in-band communication” and “out-of-band communication” with reasonable certainty

a) Icon’s Newly Presented Contention Is Improper and Waived

As an initial matter, Icon offers a new contention on appeal – that “in-band communication” and “out-of-band communication” are definite because of different hardware limitations. Icon has waived the right to now assert a new contention. This Court may only consider the issues that Icon actually presented to the district court for consideration. *Sage Products, Inc. v. Devon Indus., Inc.*, 126 F.3d 1420, 1426 (Fed. Cir. 1997).

It is important to focus on the indefiniteness question that was before the district court, before addressing the inherent vagueness of Icon’s newly-asserted contention for definiteness. That question was the nature of the claimed kinds of communications: “in-band communication” and “out-of-band communication.” Specifically, do these features allow a person of ordinary skill in the art at the time of the invention to identify a particular communication as either an “in-band communication” or an “out-of-band communication”, and distinguish between the two? Icon asserted to the district court that “in-band communication” is “communication to or from the exercise apparatus,” (A929) and “out-of-band communication” is “any communication other than the in-band communication.” (A930).

Icon's new contention proposes several hardware limitations that it argues help identify different hardware. This, according to Icon, allows one of ordinary skill in the art to deduce the kind of communication processed by the hardware, and thus define "in-band communication" and out-of-band communication."

Under Icon's new contention:

- (1) "in-band" is definite because those skilled in the art would recognize it refers to communication processed by separate and relatively inexpensive, non-complex and standard-issue hardware, (Brief, 31-44) and
- (2) "out-of-band" is definite because those skilled in the art recognize it refers to communication processed by more complex, or more powerful, or more expensive, non-standard-issue hardware, which is an enhancement.

(*See, e.g.*, Brief, 32, 36, 40, 43, 44).

Icon highlights the hardware limitations saying "the distinction as to which communications are 'in-band' and 'out-of-band' is based on hardware and correlatively, on pathway." (Brief, 35). However, Icon's claim construction before the district court did not include, or make reference to, such hardware limitations. Icon's construction below had: no inexpensiveness limitations, no complexity limitations, no powerfulness limitations, and no standard-issue limitations. Nevertheless, Icon now asserts that the '351 patent teaches that hardware limitations are necessary to define these two kinds of communications. Icon failed

to assert this “different hardware” contention in its claim construction position and may not do so for the first time on appeal. *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1347 (Fed. Cir. 2001) (concerns about the proper role of appellate review “preclude a party from changing its claim construction, that is, the scope of its claim construction, on appeal.”); *see also Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1250 n.2 (Fed. Cir. 2008) (argument that additional limitations in asserted dependent patent claims rendered claims sufficiently definite was waived, since assignee did not present argument to district court so as to preserve issue for appeal).

The Supreme Court has emphasized that the doctrine of waiver is “essential in order that parties may have the opportunity to offer all the evidence they believe relevant to the issues ... [and] in order that litigants may not be surprised on appeal by final decision there of issues upon which they have had no opportunity to introduce evidence.” *Hormel v. Helvering*, 312 U.S. 552, 556 (1941). Icon’s arguments “at the trial and appellate level should be consistent,” and “should not be a moving target.” *Finnigan Corp. v. Int’l Trade Comm’n*, 180 F.3d 1354, 1363 (Fed. Cir. 1999). Had Icon asserted its new argument in the trial court, Polar would have had an opportunity to develop the record on this issue and challenge the hardware distinctions Icon purports to draw between “in-band communication” and “out-of-band communication” through normal trial court processes, such as

various rounds of briefing, expert testimony, and hearings. Icon’s failure to make its new “different hardware” contention before the district court deprives Polar of an “adequate opportunity for response and evidentiary development,” now that the evidentiary record is closed. *Id.* Icon must bear the consequences of its own waiver.

b) Icon’s Newly Presented Contention Is Unworkable and Not Supported By the ’351 Patent

Icon’s advancement of new a contention for definiteness for the first time before this Court, having failed to do so below, demonstrates that the specification is not clear and does not provide meaning for the “in-band communication” and “out-of-band communication” with reasonable certainty. The new contention, which rests on newly proposed hardware limitations, does not resolve the ambiguities inherent in the ’351 patent. It adds new dimensions of ambiguity to an already ambiguous patent. It adds new dimensions of ambiguity to an already ambiguous patent. Icon even eliminates any alleged clarity stating “there are no artificial boundaries on ‘in-band,’ except that whatever information cannot be handled ‘in-band’ must be handled, if at all, ‘out-of-band.’” (Brief, 43).

Icon’s appellate brief does not explain how the ’351 patent discloses: how to determine, for example, what constitutes “inexpensive,” “standard issue,” “separate,” “complex,” or a “powerful controller.” The sliding scale between complex and simple; between expensive and inexpensive; and between more

powerful and less powerful is arbitrary and unworkable. It replaces trying to define “in-band communication” and “out-of-band communication” without the required reference, with trying to identify hardware without guiding principles provided by the ’351 patent.

Icon ignores this fatal flaw. Instead it portrays the malleability of its approach to definiteness as the: “inventors [][being] prescient, however, and recogniz[ing] that what is prohibitively complex today may be rudimentary tomorrow.” (Brief, 40). Again, Icon’s appellate brief does not explain where the ’351 patent teaches how to make the determinations of: what is rudimentary, what is inexpensive, what is expensive, what is powerful, what is complex, what is simple, or how to draw a line between these choices with reasonable certainty.

The reason for Icon’s failure is simple. There is no disclosure in the ’351 patent, and Icon’s appeal brief cites none, of how such determinations would be made, or when such a determination would be made: at the time of the patent, a couple of years later, 8 years later, or today. Inherent in Icon’s sliding scale is that the complexity, power, and expense of hardware technology change over time. Thus, the answers to these determinations are inherently different as time passes, and different for different persons. Consequently, under Icon’s new contention, the scope of the claims changes over time and with the views and personal experiences of different persons, without disclosure in the ’351 patent to assess the

reasonableness of such views. The '351 patent provides no reference to define the terms. It is precisely because the intrinsic evidence does not help to answer the indefiniteness questions that the district court concluded it needed the assistance of those skilled in the art.

Icon's new contention is unworkable. Imagine if a product is manufactured in high volumes and the manufacturer gets a good deal on communication components, such as a processor, making it "inexpensive" for that manufacturer. Presumably under Icon's new hardware proposal, the components would be "in-band" because they are "inexpensive." That same product may have some models that have satellite communications hardware for high-speed internet access in remote areas, but these models are sold at lower volumes. The manufacturer thus does not get such a good deal and the satellite components are thus "more expensive" and may be considered "more complex." Although how such an assessment is made is unanswered by Icon's new proposal. Under Icon's hardware construction, this product would have both "in-band" hardware and "out-of-band" hardware and thus, by inference, both "in-band communication" and "out-of-band communication."

But, a small manufacturer that sells fewer products would not get a deal on its communications components, making them more "expensive" parts for the competitor. The small manufacturer also has models that use satellite components.

These too are “expensive” parts. Under Icon’s hardware assessment, the small manufacturer’s product would not have “in-band” hardware. It may have only “out-of-band hardware” because it is all “expensive” for the small manufacturer. Thus, by the inference Icon’s contention makes, the small manufacturer’s product has only “out-of-band communication.” The same hardware made in two different factories leads to the illogical conclusion that the same hardware has different communications: the high volume product has both “in-band communication” and “out-of-band communication,” but the same product from the small manufacturer has only “out-of-band communication.”⁹ It would therefore likely lead to different infringement findings for the products. There is no objective way to assess the parameters Icon offers in its new “different hardware” contention, and it does not aid in resolving the ambiguity of the ’351 patent.

The patent statue prohibits such malleability. A patent, and specifically its claims, is not a living document that is malleable with time. The Patent statue requires that a patent specification “conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards

⁹ The debate can continue with a discussion of what if someone says the non-satellite communications components are “less complex” than the satellite components.” How to answer the debate depends on the parties’ points of view.

as [the] invention.” 35 U.S.C. § 112 (paragraph 2).¹⁰ Icon’s sliding scale hardware limitations basis for definiteness inherently fails this test for several reasons. First, its parameters change over time, leaving the scope of the claims variable over time and subject to unknown future changes in technology and in economics. Second, and equally important, left unanswered by the ’351 patent is how to determine if the parameters are present and whether their nature (e.g., expensiveness or complexity) meets what Icon considers to be “in-band” hardware or “out-of-band” hardware.

The definiteness requirement is not satisfied merely because “a court can ascribe *some* meaning to a patent’s claims.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014) (quoting *Nautilus*, 134 S. Ct. at 2130) (emphasis in original). Rather, “[t]he claims, when read in light of the specification and the prosecution history, must provide objective boundaries for

¹⁰ There are limited circumstances where infringement analyses permit claims to cover advancements in technology. Those limited circumstance are not present here. At the very least because those limited circumstances arise in infringement analyses, not indefiniteness assessments. Nevertheless, this case does not involve, e.g., means-plus-function language which, by statute, allows additional claim scope to include “equivalents.” Even the “equivalents” assessment has a reference – corresponding structure disclosed in the specification. 35 U.S.C. § 112 (paragraph 6). Nor does this case involve “after developed technology.” In such an assessment, the patent has a reasonably defined scope, and the infringement inquiry focuses on new technology and whether such after developed technology is equivalent to structure disclosed in the patent. Each of these infringement inquiries occurs only if a claim satisfies 35 U.S.C. § 112 (paragraph 2). These separate inquiries allow the scope of a claim to be slightly expanded under narrowly defined constraints.

those of skill in the art.” *Id.* (citing *Nautilus*, 134 S. Ct. at 2130 & n.8). Icon’s appellate brief does not show how the ’351 patent puts reasonably certain boundaries on these parameters, thus leaving them open to interpretation without reasonable certainty.

c) The ’351 Patent Shows that “Different Hardware” Is Not Required as Icon’s Newly Presented Contention Necessitates

Icon asserts that there must be different hardware for “in-band communication” and “out-of-band communication,” “each utilizing its own hardware.” (Brief, 44). This contention fails because the ’351 patent shows that both “in-band communication” and “out of-band communication” can travel over the same communication link; being processed by the same hardware, that is, the same processor, without regard for the alleged hardware considerations of cost, complexity, or powerfulness of the communications link. Separate hardware is not required as Icon now contends. And, thus the ’351 patent, as described below, does not support Icon’s new “different hardware” contention.

The basic premise of Icon’s new contention is that there must be different hardware for “in-band communication” and “out-of-band communication,” “each utilizing its own hardware.” (Brief, 44). Icon does not explain what it means by “each utilizing its own hardware.” Based on the examples Icon provides in its appeal brief, the different hardware is at least used to process the two kinds of

communications. When processing both kinds of communications, and using only one processor (i.e., controller), there are, according to Icon's contention, only "in-band communications." Icon emphasized this point stating that "[i]f a suitably powerful controller were provided in the exercise device, then all data transfers could be 'in-band.'" (Brief, 41, 32, 35). Thus, according to Icon's new contention, if there is a suitably powerful controller to process communications, then all communications would be "in-band." On its face, this contradicts Icon's own contention that powerful hardware is associated with "out-of-band communication," whereas relatively less powerful hardware (and potentially less complex hardware) is associated with "in-band communication."

Furthermore, to illustrate this contention, Icon quotes the patent specification describing "out-of-band communication" as, e.g., high quality video being processed as "in-band communication" by a suitably powerful controller:

If a suitably powerful controller were provided in the exercise device, then *all data transfers could be 'in-band,'*" [A69 col. 17:16-18] including such things as *stereo video and audio signals that would otherwise have to travel "out-of-band"* if the device were equipped, as envisioned, only with "an inexpensive base controller for minimal 'in-band communications.'" [A62 col. 3:38-39]

(Brief, 41) (emphasis added). Thus, according to Icon's new contention, if there is a "suitably powerful controller" (how to identify such a controller is unknown) to process communications, then all communications will now be "in-band."

The '351 patent provides other teachings that contradict Icon's new "different hardware" contention. As an example, Polar refers to Figure 14 shown and discussed in the above Statement of Facts. There is no dispute that this figure shows both "out-of-band communication" and "in-band communication" to and from the exercise device. The patent also teaches that the display 298 displays the "out-of-band" information (e.g., video). (A70 col. 19:26-30) ("These "out-of-band" signals can include, for example, high speed data communication to provide real time video (e.g. streaming video over the Internet) on the display 298 for displaying video as noted above"). The interface controller 282 hardware therefore receives the "out-of-band communication" (top double headed arrow line 304), (A70 col. 19:25-27), and provides it to the display 298. The interface controller 282 also receives "in-band communication" via optional receiver 302. (A70 col. 19:22-24).

The '351 patent expressly shows, by at least Figure 14 and associated text, that the same hardware, the interface controller 282, processes both "out-of-band communication" and "in-band communication." (A70, col. 19:22-30). The "out-of-band communication" after being processed by the interface controller 282 is then displayed as video on the exercise device display 298.¹¹ According to Icon's

¹¹ The '351 patent does not say or suggest that the nature of the displayed "out-of-band" information (e.g., video) changes during the time it is processed by the interface controller 282, into some other kind of communication.

new contention, it is not clear if the interface controller 282 would be “out-of-band” hardware because it is sufficiently powerful to process video information, or “in-band” hardware because it is sufficiently powerful to process all data transfers in accordance with one teaching of the patent (A69, col. 17:16-18). But, the ’351 patent contradicts both theories because Figure 14 expressly shows the single interface controller 282 processing both “out-of-band communication” and “in-band communication.” This shows that separate hardware is not required to process “in-band communication” and “out-of-band communication.”

Figure 14 demonstrates the inconsistent and circular nature of the ’351 patent’s usage of “in-band” and “out-of-band,” which is the reason that the district court concluded the intrinsic evidence did not help resolve the indefiniteness question, and thus sought the assistance of those skilled in the art. The district court made subsidiary factual findings, including: that the terms “in-band” and “out-of-band” are relative terms, that they only have meaning in a given context with a reference, and that the ’351 patent does not disclose the required reference. These findings support the district court’s determination that the ’351 patent does not define the terms with reasonable certainty. Based on the subsidiary factual findings, it concluded that the ’351 patent does not satisfy 35 U.S.C. § 112 (paragraph 2).

Ignoring the district court’s findings, Icon attempts to explain away the ’351 patent’s inconsistent and circular disclosure exemplified by Figure 14 and its associated text. Icon’s explanation is that Figure 14 is the “expanded hardware” necessary to processes “in-band communication” and “out-of-band communication,” (Brief, 38), and argues that it “is consistent with the teachings discussed above with add-on hardware to process ‘out-of-band’ communications,” (Brief, 40). Contrary to Icon’s contention, Figure 14 shows no add-on hardware for “out-of-band communications; and shows that the same, not separate hardware, processing “in-band-communication” and “out-of-band communication.” In fact, the only relevant add-on hardware Figure 14 shows is the “optional receiver 302” for “in-band communications.” Icon’s alleged “hardware” distinction, with all of its associated hardware limitations, fails as being contrary to the plain teachings of the ’351 patent.

Glossing over this failure, Icon’s appeal brief appears to treat the ’351 patent as if it were a marketing brochure, not a patent. For example, Icon provides a quote of the ’351 patent, touting the quote as showing that “if consumers wanted something more, the patent provides for that as well by enabling ‘out-of-band’ interactions via more expensive circuitry.” (Brief, 36). Icon continues its consumer-oriented argument saying “the hardware necessary for ‘out-of-band’ communication is not standard issue,” whatever that term means, and that “it is an

optional enhancement available for those [consumers] interested in, for example, ‘high-bandwidth interactions.’” (Brief, 36) (emphasis added). As the above demonstrates, the only “optional” add-on for the exercise device is an “in-band” receiver 302, indicated by the dotted lines in Figure 14. (A70, col. 19:22-25). The exercise device controller shown in Figure 14 receives and processes both “in-band communication” and “out-of-band communication” without add-on, *optional* hardware for “out-of-band communication,” that Icon asserts its “different hardware” contention requires. The ’351 patent does not support Icon’s new contention.

In addition, Icon rests its new hardware contention on the “inexpensiveness” of the exercise device controller. (Brief, 31-32). Icon thus urged:

In the many discussions of “in-band” and ”out-of-band” that come later in the patent, it is evident that references to “out-of-band” are intended to describe something *different in kind* – something more complex or more powerful, or more expensive – is *required* to facilitate “out-of-band” communications, interactions and experiences.

(Brief, 32) (emphasis added). However, as demonstrated above, the exercise device controller 280 (which includes the interface controller 282) processes both “in-band communication” and “out-of-band communication” and is disclosed as doing so without “something more complex or more powerful, or more expensive.” In fact, as noted above, the only add-on, *optional* hardware is for “in-band communication.” And, the exercise device controller 282 processes “out-of-band

communications.” Icon asserts that processing both kinds of communications would be provided by a more powerful and more expensive processor. To the contrary, the ’351 patent describes it as preferably “[being] relatively low cost so that they can be added to each piece of manufactured exercise device.” (A69, col. 18:62-65). The ’351 patent does not support Icon’s argument add-on, optional hardware contention.

Icon turns its argument from the structure of the exercise device upon which Icon rested its new “different hardware” contention, and looks for support in the structure of another, separate part of the disclosed system – servers.¹² The context of the server structures cited by Icon, and the context of the additional components in the server noted by Icon is important.

The ’351 patent indeed does describe the Figure 21 server as having additional components such as hard disk drive 454 and an out-of-band transceiver 458. (A72, col. 23:47-50). These components are for a special arrangement where the server, via the transceiver 458 and its antenna 460, wirelessly communicate

¹² Curiously, and contrary to the plain language of the ’351 patent, Icon erroneously refers to a server as a “local computer.” Because Icon did not use either the language of the patent or the reference numerals used in the patent, Icon uses a textual identification of the server it discusses, stating “*i.e.*, the one connected to one or more exercise devices.” (Brief, 36). Which one is not entirely clear. Icon’s discussion of Figure 21, (Brief, 36-38), is the only suggestion as to which server it may be. Figure 21 is a block diagram of the server shown in Figure 20. (A62, col. 39-40). In turn, Figure 20 shows a fixed server of Figure 13. (A62, col. 4:37) It therefore appears that Icon refers to the fixed local server 266A shown in Figure 13.

directly with the user, who wears “a *wireless*, headmounted display with display screens in front of each of his or her eyes as well as ear phones.” (A72, col. 23:59-65) (emphasis added). The wireless transceiver 458 can therefore wirelessly communicate with the user’s wireless headmounted display. More particularly, the patent discloses the transceiver 458 is provided so “high quality and stereo video information could be sent to a user, as well as high fidelity and stereo audio information. This information can be viewed on a television screen, a computer monitor, a headmounted display, a display associated with the exercise device, etc.” (A72, col. 24:1-7).

As discussed above, in Figure 14 the exercise device display is display 298. (A70, col. 20:30-32). The interface controller 282, as noted above, receives “out-of-band communication,” processes it, and sends it to display 298. Figure 14 does not include add-on or additional hardware to process the “out-of-band communication” that may be sent from a server via transceiver 458. Thus, while the Figure 21 server uses an in-band transceiver, and an out-of-band transceiver, the exercise device controller shown in Figure 14 does not. Consequently, the ’351 patent shows that separate hardware is not required for “in-band communication” and “out-of-band communication, whereas Icon’s “different hardware” contention requires separate hardware. The ’351 patent does not support as Icon’s new “different hardware” contention.

Icon further argues that the patent's discussion of using cell phones reinforces its new "different hardware" contention because using a cell phone "require[s] hardware over and above the standard –issue 'in-band' hardware." (Brief, 40) A cell phone is unarguably a separate device that is required to make a cell phone call. But, Icon does not explain why the need for a cell phone to make a cell phone call leads to its inferred conclusion that within the context of the '351 patent, "out-of-band communication" requires separate, non-standard issue, more complex, more expensive hardware. As the above establishes, the '351 patent shows that separate hardware is not required. At most, cell phone use is described as an "out-of-band communication."

Icon's appeal brief also apparently distinguishes between different kinds of cell phone calls. It argues that an "'out-of-band' experience within system 250 is different from a 'true out-of-band experience[] such as a cellular telephone conversation with the trainer' because the latter takes place outside the claimed system, using none of the hardware described as comprising the system." (Brief, 40). This contradicts the language of claim 1 which requires no hardware for the claimed "out-of-band communication."¹³ It contradicts claim 5, which recites an "out-of-

¹³ The impropriety of this method step is not before this Court. Nevertheless its irregularity is illustrated by an analogy. The claimed "out-of-band communication" simply takes place with a user. The claim places no hardware or temporal limitations on the communication. This is like claiming a bicycle comprising a frame, wheels rotatably mounted on the frame, and a conversation with the rider. Clearly, the conversation with the user adds nothing to the bicycle structure and is simply an action more suited to a method claim.

band communication device capable of communication with a user.” (A76, col. 31:6-7). It also contradicts the ’351 patent specification. Multiple portions of the ’351 patent reference cell phone calls as constituting “out-of-band communications.”¹⁴ (See A68, col. 16:62-63; A69, col. 17:43-46; A69, cols. 17:66-18:1; A74, col. 27:25-27). These multiple references demonstrate that a cell phone can constitute an “out-of-band communication device.” Thus, while a cell phone is a separate device, its use does not lead to the conclusion Icon asserts: that separate hardware is required. The ’351 patent shows that separate hardware is not required.

d) The Prosecution History Does Not Support Icon’s Newly Presented Contention

Icon asserts that the prosecution history confirms that the ’351 patent discloses “in-band communication” and “out-of-band communication” to one of ordinary skill in the art with reasonable certainty. (Brief, 44-47). Icon contends that because the claims were amended to “call out the ‘in-band’ / ‘out-of-band’ dichotomy, as well as the ‘relationship’ between the two,” the claims satisfy 35 U.S.C. § 112 (paragraph 2).¹⁵ Icon rests its position entirely on the presumption of correctness, asserting that the “prosecution history compellingly shows the clarity of the terms at issue *when read in context and from the proper point of view.*”

¹⁴ The parties did not dispute, and Icon’s appellate brief does not argue otherwise, that that the ’351 patent uses the terms “communication,” “experience,” and “interaction” interchangeably. (See e.g., A12-13).

¹⁵ Icon’s appellant brief leaves unexplained what the alleged “dichotomy” is.

(Brief, 46) (emphasis added). Icon does not say what the “proper point of view is.”

Presumably it is Icon’s.

As discussed in the Statement of the Case, the prosecution history shows that the claims were amended to recite two kinds of communication: “in-band communication,” and “out-of-band communication.” Neither the applicants nor the Examiner discussed what these two kinds of communications were. The issue of indefiniteness was never raised. Icon’s appellant brief does not argue otherwise. Instead, Icon argues that because the Examiner is presumed to have done his job correctly, he did.

The amendments to the claims undeniably limit the claims to include two kinds of communications. And, as noted in the above Statement of Facts, the applicants argued that these communications distinguished the claims over the prior art.¹⁶ The meaning of the two kinds of communications was never mentioned. Thus, the prosecution only shows that the claims were amended to recite two kinds of communication and that the Examiner then allowed the claims. Besides the presumption of correctness, Icon’s appeal brief does not assert any facts from the prosecution history to aid in understanding “out-of-band

¹⁶ Dr. Heppe testified, that as one of ordinary skill in the art, it was not possible to understand why the Examiner believed the claims distinguished over the prior art. (A2169:7-A2170:1).

communication,” “in-band communication” or the claimed “relationship.” The district court correctly arrived at the same conclusion. (A16).

B. The Clear Factual Findings Establish Indefiniteness

Icon asserts that the district court erred because it arrived at a conclusion different than the inference Icon makes based on the presumption of correctness. This, according to Icon, “strongly suggests that the district court erred.” (Brief, 47). Icon, however, ignores the clear findings of fact made by the district court as outlined in the Statement of the Case and Statements of Facts.

After considering the intrinsic evidence and finding that it did not resolve the indefiniteness issue, the district court concluded it needed the assistance of those skilled in the art. (A750). The district court held an evidentiary hearing to receive evidence, as at trial. (A2081:17-22, A2082:10-14). The district court made clear factual findings grounded in background technology testimony and supported by the record: (1) the terms “in-band” and “out-of-band” have a general meaning to those skilled in the art (A20); (2) they are relative terms (A19, A20); (3) they are treated as separate and distinct terms (A20); and (4) they only have meaning in a given context with a defined reference (A21). The district court based its findings on the ten extrinsic references cited by both experts, and Dr. Heppe’s tutorial on background technology, as detailed above in the Statement of Facts. (A21, A2159-60).

1. The Factual Findings Based On Expert Testimony Are Subject to Clear Error Review

The district court's factual findings are subject to clear error review. *Teva II*, 135 S. Ct. at 841 (factual findings based on background technology and the meaning of terms in the relevant art "must be reviewed for clear error on appeal."); *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 789 F.3d 1335, 1341-42 (Fed. Cir. 2015) ("*Teva III*") (findings of fact based on how one skilled in the art understands the patent specification are reviewed for clear error); *BrainTree Labs., Inc. v. Novel labs., Inc.*, 749 F.3d 1349, 1358 (Fed. Cir. 2014) (District's courts findings from a bench trial reviewed for clear error.)

Although Icon argues that there are "no subsidiary findings of fact," (Brief, 52), the Supreme Court and Federal Circuit "have made clear that factual components include the background science or the meaning of a term in the relevant art during the relevant time period." *Teva III*, 789 F.3d at 1342 (citing *Teva II*, 135 S. Ct. at 841); *Lighting Ballast Control LLC v. Philips Elecs. N.A. Corp.*, 790 F.3d 1329, 1339-39 (Fed. Cir. 2015) (deferring to district court's factual findings concerning knowledge in the art with respect to sufficiency of structure in claim). Icon's objection to Dr. Heppe's testimony concerning background technology and how one skilled in the art would understand the patent specification is wholly unfounded. Contrary to Icon's urging, an inquiry is not transformed into a legal one simply because the district court's factual finding is

nearly dispositive of the ultimate construction of the claim term. *Teva II*, 135 S. Ct. at 842 (“[A]n issue does not lose its factual character merely because its resolution is dispositive of the ultimate’ legal question.”) (quoting *Miller v. Fenton*, 474 U.S. 104, 113 (1985)).

The Supreme Court in *Teva II* held that facts based on testimony of skilled artisan should be reviewed for clear error. *Teva II*, 135 S. Ct. at 841. Similarly, the Federal Circuit in *Teva III*, reviewed expert testimony directed to how a skilled artisan would understand how data in the patent reflected “molecular weight,” which was the term being construed. The Federal Circuit likewise confirmed that factual findings based thereon, were subject to clear error review. *Teva III*, 789 F.3d at 1341-42. In *Teva III*, expert testimony did not define the term, i.e., “molecular weight.” Instead, similar to the expert testimony at issue here, the *Teva III* expert testimony showed how a skilled artisan would understand the specification reflects “molecular weight. *Id.* Icon’s objection is legally unfounded; both *Teva II* and *Teva III* held that facts based on testimony of skilled artisan should be reviewed for clear error.

Icon next objects to Dr. Heppe’s testimony because he analyzes “the meaning of the disputed claim terms. (Brief, 51). Icon’s objection is similarly groundless. As an initial matter, it is “appropriate for the district court not only to consider the intrinsic evidence, but also to consider [an expert’s] interpretation of

that evidence, both in context and from the perspective of a person of ordinary skill in the art. *Tap Pharm. Products, Inc. v. Owl Pharm., L.L.C.*, 419 F.3d 1346, 1354 (Fed. Cir. 2005). Dr. Heppe testified on background technology to the patent – how skilled artisans understood the term “in-band” and “out-of-band.” (A2159-60). Icon recognizes the background nature of Dr. Heppe’s testimony because Icon noted that was given “without regard to the patent” and “other intrinsic evidence.” (Brief, 21).

Dr. Heppe testified that he could not find a reference in the ’351 patent to delineate “in-band” from “out-of-band.” Without the required reference he, as a skilled artisan, could not determine the meaning of the terms in the context of the ’351 patent. He therefore did not testify as to the meaning of the terms as Icon asserts. Dr. Heppe testified on how a skilled artisan would assess the specification attempting to find the reference needed to give meaning to “in-band communication” and “out-of-band communications” in the context of the ’351 patent. This analysis was specifically directed at determining if there was a discernable reference, not the meaning of the terms. Such testimony on how a skilled artisan understands certain passages of the specification falls squarely within the type of expert testimony and factual findings based on thereon that both *Teva II* and *Teva III* held required a clear error review.

The district court looked to this background testimony and found that the terms: (1) have a general meaning to those skilled in the art (A20); (2) are relative terms (A19, A20); (3) are treated as separate and distinct terms (A20); and (4) only have meaning in a given context with a defined reference (A21). The district court applied these findings, as well as knowledge of the patent developed through its questions at the hearings,¹⁷ to its analysis of the '351 patent and the prosecution history to determine whether the required reference was disclosed. (A20-21). It found none. *Id.* Each of these factual findings is subsidiary to the ultimate, legal conclusion of indefiniteness, and is subject to clear error review. *Teva II*, 135 S. Ct. at 841.

2. The District Correctly Found that “In-Band” and Out-of-Band” are Relative Terms that Require a Reference to Have Meaning in a Given Context

Icon’s appeal brief makes no serious effort to show the district court’s factual findings are wrong, or are clearly erroneous. Instead, Icon urges four general blanket bases that it argues show that the district court erred by crediting Dr. Heppe’s testimony directed to the district court’s subsidiary factual findings. They argue that his testimony was: (1) unsupported and conclusory (A56); (2) rambling (A56); (3) absurd (A57); and (4) should not have been credited because its expert had a more common sense approach (A57). Mainly, Icon

¹⁷ See e.g., n.7 above.

objects to the testimony because it does not adopt its “*selection*” theory for definiteness.

Icon alleges that there is “no support for the proposition that the inventors of the ’351 patent were using these terms [“in-band” and “out-of-band”] in the overly-restrictive way [as being relative terms and requiring a reference to have a meaning in a given context].” (Brief, 54). Icon bases this objection on its “different hardware” contention (Brief, 54), which it alleges clearly defines these terms. Icon asserts a skilled artisan “would not be left dumbstruck unless ‘in-band’ is specifically defined.” (Brief, 55). First, Polar addressed the failings of Icon’s “different hardware” contention above. It does not support Icon’s arguments or objection.

Second, Icon ignores the fundamental fact that “in-band” and “out-of-band” are relative terms that have meaning in a given context only with a defined reference. (A19-21). It ignores the FM example and each of the ten extrinsic references supporting this understanding, both discussed in the Statement of Facts above. The district court made clear factual findings based on the FM example and the extrinsic references. (A19-21). These clear factual findings, based on background technology, are subject to clear error review. *Teva II*, 135 S. Ct. at 841 Icon’s appeal brief makes no substantive attempt to challenge these fundamental facts as being clearly erroneous.

Icon's other asserted basis for objecting to Dr. Heppe's testimony is its general comment that the testimony "conflicts with the patent's intrinsic record." (Brief, 55). Icon provides no support for this general comment. Icon thus did not even attempt to show clear error. The district court's subsidiary factual finding are thus controlling. *Teva II*, 135 S. Ct. at 838 (citing *Harries v. Air King Products, Co.*, 183 F.2d 158, 164 (2d Cir. 1950) (L. Hand, C.J.)).

3. The District Correctly Found that the '351 Patent Does Not Disclose to Those of Ordinary Skill in the Art, a Reference to Differentiate "In-Band" and "Out-of-Band"

Icon does object to the district court's subsidiary factual finding that the '351 patent does not disclose to those of ordinary skill in the art, a reference is needed to differentiate "in-band" and "out-of-band." (A19-22). Instead, Icon rests its appellate argument on the premise that extrinsic evidence is unnecessary because its "different hardware" contention clearly defines the terms. The above shows that the '351 patent does not support the "different hardware" contention, and that the contention is at odds with the '351 patent. In addition, the "different hardware" contention is improperly before this Court, because Icon failed to raise it before the district court.

Icon failed to specifically challenge this finding and to show clear error in the district court's subsidiary factual finding. The subsidiary factual finding is thus controlling. *Teva II*, 135 S. Ct. at 838 (citing *Harries*, 183 F.2d at 164).

4. Icon’s *Selection* Criterion amounts to Nothing More than An Improper “I Know It When I See It” View of Definiteness

Icon argues that “a person of ordinary skill in the art does not sit helplessly waiting to be told what is ‘in-band.’” (Brief, 56). Instead, Icon argues that a skilled artisan “*selects* the ‘in-band’ reference and understands everything else is out-of-band.” *Id.* To the extent Icon acknowledges that there must be a reference, that position coincides with that of Dr. Heppe, and with the district court’s factual findings. Icon does not challenge any of the district court’s other factual findings. It therefore has not shown that they are clearly erroneous, including that the ’351 patent does not disclose the required reference. (A21-22). The subsidiary factual finding is thus controlling. *Teva II*, 135 S. Ct. at 838 (citing *Harries*, 183 F.2d at 164).

Icon’s appeal brief posits an alternative “*selection*” theory where a skilled artisan selects what constitutes “in-band communication” and thus “out-of-band communication” are those that are not “in-band.” (Brief, 30-31). On its face, this “*selection*” theory flatly contradicts both claims 1 and 5. Both claims recite the two kinds of communication at issue here: “in-band communication,” and “out-of-band communication.” Claim 1 also recites a third kind of communication: “data communication between said local server and said remote server.” (A75, col. 30:53-54). Claim 5 includes similar language: “at least one remote server in

communication with said local server.” (A76, col. 31:15-16). Thus, *selecting* “in-band communication” and thus defining “‘out-of-band’ communications [] [as] those communications that are not ‘in-band,’” as urged by Icon’s selection theory, flies in the face of the claim language, which requires three kinds of communications.

Moreover, as noted in the above Summary of the Argument, the *selection* theory epitomizes indefiniteness. It provides no guidance for making the *selection*, and Icon’s appeal brief proposes none. The *selection* theory does not help provide reasonably clear claim boundaries. Icon’s suggestion that simply “*selecting*” a communication, amounts to nothing more than “I know it when I see it.” It is arbitrary and unworkable because it fails to address the fundamental fact that a reference is needed to delineate the relative terms “in-band” and “out-of-band.”

C. Icon’s Alleged “Pathway” Is Ambiguous On Its Face

Icon asserted a “pathway” theory of definiteness before the district court. Icon’s appellate brief has abandoned this theory and does not present it for review. Instead, Icon raises its new “different hardware” contention. Sprinkled in the discussion of that contention, however, Icon mentions “pathway” without ever explaining what a “pathway” is. (*See e.g.*, Brief 10, 19, 27, 31, 43, 44, and 57). The term “pathway” is not in the claims, the patent, or its prosecution history. (*See e.g.*, A2129:16-24). And, the meaning of “pathway” is unknown. Even its source,

Icon's expert, had not "given it [the meaning] much thought." (A2128:9-5). He did testify that "in a general sense, was a way to communicate from Point A to Point B." (A2129:1-15). In short, Icon's intended meaning for the word "pathway" below was not clear. Icon's appeal brief makes no effort to give meaning to this vague term. It simply treats the term as if the reader already knew what is meant. From its usage in the appeal brief, the meaning of the term is unknown and is thus ambiguous. The use of an ambiguous term to address indefiniteness is of little help.

D. The Claims at Issue are Invalid Because the '351 Patent Provides No Boundaries for the Claimed "Relationship," and Does Not Inform Those Skilled in The Art About It With Reasonable Certainty

The inescapable fact is that the '351 patent provides no boundaries for the claimed "relationship." Icon's appeal brief does not even discuss the indefiniteness of the claimed "relationship." Icon offers no rationale, no bases, and no guidance on how to determine the boundaries of the claimed "relationship."

Apparently, Icon rests its appeal of the district's courts finding that '351 patent provides "no guidance of what comprises the 'out-of-band communication' having a relationship to the 'in-band communication'" (A24) on the presumption of correctness. (Brief, 46). Icon asserts that the Examiner "was fully confronted with the question of whether the claims, as specifically amended to distinguish over the prior art on the basis of 'in-band,' 'out-of-band' and 'relationship,' were

reasonably clear in light of the teaching of the patent and the prior art.” (Brief, 46). Because Icon’s appeal brief fails to address the definiteness of the claimed “relationship” other than the presumption of correctness, Polar can only address that presumption.

Icon does not object Dr. Heppe’s showing of the vast, undefined scope of the “claimed” relationship. Icon’s appeal brief does not separately address why it contends the district court’s conclusion is erroneous. Polar cannot respond to positions not advanced.

Consequently, Polar addresses what the only basis in Icon’s appeal brief, the presumption of correctness. It is not disputed, and Icon’s appeal brief does not argue otherwise, that the term “relationship” does not appear in the ’351 patent prior to the claims. (A22). It is also undisputed that the term was added to the claims by amendment; (A 619-620; Brief 12-13) and that the applicants did not mention “relationship” in their remarks during prosecution of the application. (A624-26). Lastly, it is undeniable that the Examiner did not raise the issue of indefiniteness during prosecution. (A613-16, A628-31). Icon’s assertion of the Examiner being “fully confronted” with the issue of indefiniteness is thus factually unfounded.

These indisputable facts show that the application did not include the word “relationship” prior to it being added to the claims. When it was added to the

claims, the applicants provided no discussion of what they meant by “relationship.” Neither the patent nor the prosecution history provides any basis for determining the boundaries of the claimed “relationship.” Icon’s appeal brief does not argue otherwise. Nor does it allege error in the district’s court’s analysis of the claims and specification in attempting to determine the boundaries of the claimed “relationship.” Polar therefore cannot address arguments not made.

The district court looked to the claims and the specification for possible boundaries. It found that the language could include telephone calls, and that the claims did not place any temporal limitations on the communications that supposedly have a relationship. The district court also extensively questioned Icon on the nature and scope of the claimed “relationship.” (See e.g., A449:20-A450:8; A462:5-7; A480:20-A482:4; A494:22-495:11).¹⁸

The district court found that neither the claim language nor the ’351 patent provides any “guidance of what comprises the ‘out-of-band communication’ having a relationship to the ‘in-band communication.’” (A24). This is well supported by the record, which evidences the district court independently investigating the nature and boundaries of the claimed “relationship,” including the presumption of correctness. (See e.g., A491:14-492:16). Because all of the

¹⁸ As of the filing of this brief, the transcript of the March 30, 2015 hearing was not yet part of the joint appendix. Polar therefore cannot supply the multitude of additional examples of the district court independently investigating the nature of the boundaries of the claimed “relationship.”

transcripts are not yet part of the joint appendix, Polar cannot supply additional examples of the district court's independent analysis.

Icon also offers a new construction for the claimed "relationship" that it did not present to the district court. (Brief, 44). Icon's presentation on Appeal of this new construction is improper and prohibited. *Interactive Gift Exp., Inc. v. Compuserve Inc.*, 256 F.3d at 1347 (Fed. Cir. 2001) (concerns about the proper role of appellate review "preclude a party from changing its claim construction, that is, the scope of its claim construction, on appeal.").

The district court found that the patent does not offer guidance on the boundaries of the claimed "relationship." Without the ability to determine the boundaries of the claimed "relationship," the boundaries are arbitrary and not defined with reasonable certainty, under either a clear error or *de novo* standard of review.

CONCLUSION

The '351 patent uses the terms "in-band" and "out-of-band" in overlapping and inconsistent ways that do not inform those skilled in the art about the scope of the invention with reasonable certainty, and provides no boundaries for the claimed "relationship." The clear factual findings underscore the reason the intrinsic evidence does not inform skilled artisans about the meaning of the terms with reasonable certainty, the terms are relative and only have meaning in a given

context with a defined reference. The intrinsic evidence does not provide a reference. Polar therefore respectfully submits that the judgment of invalidity be affirmed.

November 16, 2015

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CERTIFICATE OF FILING AND SERVICE

I hereby certify that on this 16th day of November, 2015, I caused this Brief of Appellees to be filed electronically with the Clerk of the Court using the CM/ECF System, which will send notice of such filing to the following registered CM/ECF users:

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Dated: November 16, 2015

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